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ABSTRACT

Educational research conducted by classroom teachers can offer valuable insight into the experience of teaching and the nature of student learning. However, striving to be both a researcher and a teacher can present unique and serious challenges. An incident from the classroom experiences of a researcher/teacher is described that portrays much of what is difficult about being both a researcher and a classroom teacher. The Aristotelian distinction between the theoretical and practical sciences that provides a foundation from which the nature of teaching and research practices might be argued as conflicting is examined. In the second part of the analysis, the focus is on challenges that seem to possess a distinct moral dimension regarding issues of conduct. The researcher/teacher is frequently trying to get students to act and think in ways that are quite different from established classroom practices. It is tempting to classify the conundra that arise as dilemmas (no satisfactory solution), but it is argued that it is sometimes more productive to construe them as tensions between two unfair choices. Doing so provides an opportunity for moving ahead, in that the rules, values, or experiences that underlie the class's expectation of what is "fair" can be examined and changed. By contrast, with moral dilemmas, where both choices are somehow wrong, the teacher is left without recourse. One figure contrasts theoretical and practical disciplines. (SLD)

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Challenges confronting the researcher/teacher:

Conflicts of purpose and conduct

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Abstract

Educational research conducted by classroom teachers can offer valuable insight into the experience of teaching and the nature of student learning. However, striving to be both a researcher and a teacher can present unique and serious challenges. This article begins with a description of a specific incident from my classroom experience that portrays much of what I find difficult about being both a university researcher and a classroom teacher. In the first part of the analysis, the Aristotelian distinction between the theoretical and practical "sciences" provides a foundation from which the nature of teaching and research practices might be argued as conflicting in purpose. If the goal of research is to understand while the goal of teaching is to act responsibly and morally, what are the implications of these differences? In the second part of the analysis, I focus on challenges that seem to possess a distinct "moral" dimension where issues of conduct seem to be at hand. As a researcher/teacher I am frequently attempting to get students to act and think in ways that were quite different from established classroom practices. The tensions that I subsequently encountered led me to question whether my conduct was appropriate for a teacher. While it is tempting to identify these conundra as dilemmas (i.e. no satisfactory alternative), I argue that it can sometimes be more productive to construe them as tensions between two unfair choices. Doing so provides an opportunity for moving ahead: the rules, values, or experiences that underlie the class's expectation of what is "fair" can be examined and changed. By contrast, with moral dilemmas, where both choices are somehow "wrong", the teacher is left without recourse.

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A case of conflict

On and on she went with her ideas about why the lit candle in the beaker went out when vinegar and baking soda were added. Her voice sang with such enthusiasm that I sensed she felt quite compelled by her own thoughts.

Unfortunately, when Tori finally finished her explanation, I had absolutely no idea what she had said. I smiled weakly and looked her in the eyes. Tori was sitting there, in the front of the classroom, upright and proud. Not knowing quite what to say, I slowly lifted my gaze to the rest of the class. Sixteen pairs of eyes, in varying states of alertness, were aimed in my direction. They were silent and expectant. They were waiting for me, their teacher.

"Oooookaaaay, Tori," I acknowledged hesitantly. Immediately, three or four students simultaneously began to shout out their own explanations about why the candle flame went out. Their hands were raised, of course.

"Wait, wait," I said, asking patience from the others. "I want to hear more about what Tori has to say." Her explanation had been so unusual. I sensed something interesting was close at hand. Recently, I had been doing quite a bit of thinking and writing about how students' explanations for natural phenomenon were or were not scientific. Tori's confusing account presented a wonderful opportunity for an in-depth examination of these issues.

"Tori, could you repeat your explanation again for me?" I thought that a second pass I might enable me to understand enough to ask her more specific questions. I was being deliberately careful not to obscure her original ideas by putting my words to her explanation. If I wanted to understand and, perhaps at a later time, write about students' naive ways of explaining, I had to let Tori do as much as she could on her own.

After Tori's long recounting, I was able to ask a follow-up question. She sighed quietly. I reassured her that I knew that this was difficult, but to try her best.

Tori's eyes quickly glanced backwards to the rest of the class. I noticed that other students were still trying to offer their own accounts, although there were now fewer than before. Johnny, in the back, began pounding out a rhythm with his palms and knuckles on the desk top.

I began to feel slightly uncomfortable about continuing my line of questions with Tori. The rest of the class was clearly losing interest and I was running the risk of losing the focus of the lesson. However, this opportunity to understand Tori's explanation of this phenomenon

would never present itself again. We had just scratched the surface, but we were making interesting progress.

"Tori," I asked, "Can you say more about exactly how you thought the fizzing put the candle flame goes out?" As I asked this question, I was moving toward the center of the classroom with one hand raised. With the other hand, I put my finger to my lips. Three simultaneous non-verbal signals requesting the other students to listen.

Tori signed again, this time in loud exasperation. "I already told you!"

Just as I had suspected (and hoped)! Tori was beginning to provide a perfect illustration of how students often confuse description with explanation. She had described the vinegar and baking soda fizzing which, she explained, was the reason the flame went out. By scientific standards, the explanation was still missing from her account. This unexpected exchange clearly had the potential to reveal interesting differences between scientific and non-scientific criteria for what "counts" as a good explanation.

Excited, I frantically tried to think of a way to carefully move Tori along. Standing prominently in the center of the room -- my right hand raised, my left finger to my lips, my eyes comforting Tori -- I attempted to phrase my next question.

A few moments passed. I couldn't think of what to ask. I couldn't concentrate. Frustrated and tense, I looked around the room.

Larry rocked back in his chair; Earl was making fun of Marcus's haircut; Telly and Tyaisha had their heads on the desk. I could hear Sid and Chris, who had been eager to share their ideas, grumbling angrily about how I never called on them. Johnny, with a faraway look in his eyes, continued to pound an incessant rhythm on the desk.

What is a researcher/teacher?

Webster's New Collegiate Dictionary defines research as "1: careful or diligent search, 2: studious inquiry or examination." The primary purpose of research is to learn through investigation. The researcher's efforts are characterized by observation, analysis, and reflection. The primary purpose of middle school science teaching is to bring others to understand. In addition, the teacher strives to make something good happen, to facilitate a continuity of ideas and action, to maintain harmony in the classroom. Given that teaching and research hold different

goals, does it follow that the subsequent action -- the manner in which the goals are enacted -- also be different? More importantly, might these actions not only differ in nature, but be conflicting as well? The classroom incident described above and others similar to it create tremendous ethical (what is the right thing to do?) and logistical (how do I do it?) conflict. While teaching in a public school and conducting educational research are both certainly challenging in their own rights, this paper examines tensions that may be associated with efforts to do both.

The definition of "researcher/teacher" is broad and diverse. Therefore, I shall first describe the specific nature of my work and how it relates and contrasts to other notions of researcher/teacher. While both university faculty and classroom teachers can adopt the researcher/teacher role,[1] my focus in this paper is on university faculty who spend considerable lengths of time as regular classroom teachers. In addition, researcher/teacher have typically used their unique perspective to describe various aspects of teaching such as the knowledge required, its challenges and dilemmas, the experience of insight and growth (for other examples of the researcher/teacher in science, refer to the work of D. Eichenger or C. Anderson ; in math, M. Lampert, D. Ball, or D. Chazan; in social studies: S. Wilson or K. Roth). By contrast, my goal as a researcher/teacher is to better understand student learning, rather than on my own teaching. Specifically, my research attempted to understand the degree to which middle school students' explanations for natural phenomena were "scientific" in substance and in development. I highlight these differences because I suspect that the issues I shall explore in this article become more salient in light of my efforts to understand student learning rather than the experience of teaching.

Inquiry into student learning is typically the purview of educational psychologists where the researcher's role is frequently that of an outsider. Traditional investigations of students' knowledge and reasoning might rely on either: (a) "laboratory" settings where students perform tasks outside of their regular science class, or (b) in-class situations where the researcher observes students as they are taught by the regular science teacher. From the "insider" role of the teacher, I was afforded the advantage of being able to make the inquiry sensitive and responsive to subtle

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[1] The researcher/teacher role represented in this article shares important similarities with action research where both involve research by the actual classroom teacher. Action research, however, is a form of classroom research to be conducted, in principle, by practicing teachers, not university faculty (see Wallace (1987) for a historical review of action research; see Elliott (1990) for a discussion of the central role of practitioners).

details or unanticipated events in the learning context. Instead of hoping that an observed teacher would ask a particular question or respond in a certain manner, I could now have greater control of the interaction with the students.

However, in moving away from a traditional research perspective, I was forced to consider how these changes in researcher-participant interaction might affect the validity and interpretation of what I was observing. Many of the conflicts I experienced prompted concern that my actions as a teacher compromised my efforts to understand student learning, and vice versa.

Contrasting research and teaching: An Aristotelean perspective

The argument that research and teaching differ in important ways is not a new one. Contemporary varieties of action research[2] reflect the need to identify research methods better suited in substance and form to the practice of teachers. Proponents of action research argue that the epistemology, goals, and methods of traditional scientific research are **in principle** unsuited to understanding the nature of practice. The practice of teaching can not be usefully described by abstract principles derived from the social sciences. Because the activity of teaching is so inbued with by human intention and is so dependent on the specifics of each situation, it can best be understood by those do it. Furthermore, identifying important issues, understanding them, and affecting change in teaching can only be accomplished by its practitioners (Atkin, 1989; Elliott, 1987; Carr & Kemmis, 1986).

The epistemological underpinnings of certain schools of action research harken back to what is probably the earliest attempt to contrast the distinctive features of research with "practical" activities such as teaching (Carr & Kemmis, 1986). In his political treatise "Nicomachean Ethics", Aristotle makes a distinction between theoretical and practical "sciences".[3] The two categories were distinguished by different modes of exercise, and different areas of

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[2] Early forms of action research were typically efforts by small groups of individuals to apply the generalities of theory to the specifics of their particular site and practice (c.f. Lewin, 1948; Corey, 1953). The findings of scientific research were seen as useful and only in need of "fine tuning" by those who would apply them. Later, practitioner based research was argued as crucial for generation, not just application, instructional theory.

[3] For Aristotle, any department of human activity -- conduct, production, speculation -- may be called a "science", in so far as it is alive with true thinking.

experience addressed. In his analysis and commentary on The Nicomachean Ethics, H. H. Joachim (1951) contrasts Aristotle's theoretical and practical sciences:

> "The [theoretical] 'scientific man'... is entirely concerned with knowing or understanding. He plays the part of a spectator of what is -- and is independently of him. He neither desires, nor is able, to alter the truth of things. His object is to conform his notions to the truth of things: not to bring them, the things, into harmony with his notions...When the objects of his study are subject to change -- when, for example, he is investigating natural phenomena -- he tries to watch the process; not to modify it, except so far as experimental modification helps him to understand" (p.2).
>
> "In these [practical] 'sciences' man is concerned with the sphere of process or change...He is concerned only with the variable, with that which could be other than it is, and primarily so far as he is able to initiate and control its variations. The source of the change or process in the objects, so far they come under practical and productive 'sciences', is not in them but in the man. Thus it is the will, the deliberate decision or purpose, of the agent which produces the action -- which initiates that change outside the man called an act. The source of change lies in the 'scientific man' -- in the craftsman or the agent." (p. 3)

Distinctions between the theoretical and practical sciences can be usefully examined in terms of the goals, the nature of the activity, and the subject of interest (see Figure 1). The goal of theoretical sciences is to understand; the activity is careful observation and inquiry. In the practical sciences, by contrast, the goal and activity are one and the same: to 'live well' -- to conduct oneself as a good citizen -- is both a means and an end in itself. It is interesting to note that Aristotle also distinguished a third "science" -- the production sciences where the maker's will, motives, and method of operation are of importance only in so far as they affect the character of the product. With craftsmen or artisans, for example, judgment is based upon the products, not process that produced them. Although only the theoretical and practical sciences will be examined in this discussion, the contrast between the practical and the productive sciences helps to illustrate the central role that conduct -- the means to the end -- occupies in the practical sciences.

Figure 1: Contrasting theoretical and practical disciplines

	Theoretical/Research	Practical/Teaching
Goal	- to know, to understand	- action, to do the right thing, to do what is worth doing
Activity	- observing carefully, reflecting, inquiring	- making choices, taking action
Outcome	- theory: timeless and universal - warranted conclusions	- practice: urgent and particular - justifiable decisions
The subject of interest	- the unalterable (nature), the constant, the laws and features of nature	- the alterable (human character and those things that can be changed, action that is deliberate and purposeful

It is important to emphasize that the central argument being presented is not that researchers are reflective and teachers are only concerned with action. Instead, responsible research and teaching are both fundamentally thoughtful activities. The thinking and reflection that characterizes teaching produces a decision to act, rather than a warranted conclusion supported by evidence (Schwab, 1969).[4] The inquiry that characterizes good teaching is instrumental for better practice, rather than an end in itself. Also, the Aristotelian distinctions might best be construed as a Deweyian dialectic: positions established to promote discussion and thought. Since, the forms of teaching and research are varied, identifying universal distinctions between them would be an unwarranted assertion.

[4] It is interesting to speculate how the Aristotelian distinction between the practical and theoretical sciences may account for difficulties associated with university-school collaborations. University faculty -- who are firmly grounded in assumptions of the theoretical sciences -- may assume that the professional growth of teachers can be nurtured if teachers only had more opportunity to reflect and inquire into their own practice. Teachers, by contrast, may have relatively little patience for such conceptual abstractness and would prefer to focus, instead, on the immediate, concrete actions.

Teaching as a practical science. Parallels can readily be drawn between the theoretical sciences and classroom research, and between the practical sciences and teaching. In a critique of current educational research practices, Carr and Kemmis (1986) highlight differences between teaching and research similar to those made by Aristotle:

> "Practice is particular and urgent; it is what teachers do in meeting the tasks and demands confronting them in their everyday work. Theory, in sharp contrast, is timeless and universal; it is something produced by researchers through the careful process of enquiry." (p. ??)

Alan Tom's (1984) characterization of teaching as a "moral craft" is reinforces the notion that teaching is, in essence, an effort to "do good" (for examples of other authors writing in the same vein, see Goodlad, Soder, and Sirotnik, 1990). My own experiences working with other teachers also tends to support this image of teaching. Teachers often seem to resonate to discussions dealing with issues about "What to do?" Also, in their evaluation of their own teaching, teachers often have a tendency to focus on conduct: how the students behaved in response to them. Similarly, teachers who act responsibly with compassion and respect tend to be remembered most appreciatively by students. The questions teachers' ask and the means by which they evaluate their practice reveals a strong focus on conduct and action -- the essence of a practical science.

A conflict of purpose: To observe or change the "subject"

While the contrast between the theoretical and practical succinctly suggests differences in the goals of the sciences (i.e. to understand versus to "live well"), it is in the subsequent activity -- the action taken to attain the goal -- where these differences become most apparent and paralyzing. For example, should I observe and reflect on what I see in my classroom or should I make choices and take action to change it? Returning to the example from my own experiences: as a researcher, I was reluctant to assist Tori, for fear that I would alter the "subject" (her interesting ideas about the scientific phenomenon). As a researcher, I was greatly interested in students' conceptions of the natural world and their ways of interpreting and explaining them. I felt that any assistance from me was likely to adversely influence the expression of their tenuous understanding. On the other hand, as a teacher, I felt obliged to instruct, to change Tori's notions

or her way of thinking. She was obviously struggling and expecting my assistance. It was clear to both of us that her explanation was confused and inaccurate. My sense of responsibility as a teacher urged me to help her move beyond her initial understanding as quickly as possible.

In this example, the exigencies of teaching impinged on the goals of research. Other ordinary aspects of teaching such as class size, the bell schedule, and time obligations also made it increasingly difficult to maintain two basic requirements of research: careful design and control. In scientific studies, design and control involves defining important parameters and careful planning. If outside or unanticipated factors affect the phenomena or the procedure, the research design is compromised, thereby, making data difficult to interpret.

Some may argue that expecting students' understanding to "stay still" long enough to be carefully "examined" may be naive, especially in the context of school where change in understanding through instruction is the "modus operandi". The solution, some would suggest, is to rework the focus or design of the research. The "phenomena" being studied could have been redefined as the change in the students' original understanding as a result of my intervention. Or, perhaps, the phenomena could have been construed even more broadly to include my actions, thereby, focusing on the interaction between myself and the students. In either case, the research would necessarily inform a different, but not necessarily better, question. Instead of providing a "snapshot" of the students' pre-existing scientific conceptions, the data would be more suited to creating a short "moving picture" emphasizing change in understanding.

Alternative strategies for addressing the conflict. These types of "constraints" forced me to make difficult choices. Whether these new questions are of more or less value than the original question became an important decision. Since gaining an understanding of the students' conceptions without the influence of teacher instruction was, in fact, important to my research, I was faced with three options: one unsatisfactory, one unpleasant, and one difficult.

The first option was to do as suggested above: take a more active instructional role by helping and correcting the student's understanding. This intervention fulfills the traditional responsibilities of teaching, but compromises the original research design: only sketchy inferences can be made about what the students' conceptions might have been before the influence of instruction. In addition, moving to a new set of research questions would not necessarily eliminate the conflicts of conducting research and teaching. New conflicts would surely emerge.

The second option was to proceed as initially planned and to continue asking the student extended probing questions. As described in the vignette at the beginning of this paper, I sensed fairly early in my exchange with Tori that a "traditional" teacher would probably have intervened and helped at that point. Soon after I chose continue "to observe" rather than "to teach", I realized that whether I chose to act as a "traditional" teacher or not, I could not (and should not) neglect the responsibilities of the teacher. The dilemma about how to act, therefore, represented more than a logistical conflict of purpose (to research or to teach). Because this choice occurred in the context of a classroom, moral issues of conduct (how to treat others humanely and responsibly) become centrally involved.

Therefore, any viable option must begin with the assumption that most actions in a classroom setting will have moral implications, whether these actions are primarily research or teaching in purpose. Before the specifics of the third option can be discussed, the nature of the moral imperatives underlying research and teaching will be examined. In the following sections, an apparent conflict between the moral dimensions research and teaching exemplified in the vignette is elaborated. Then, the issue of how to address this conflict is discussed.

Examining the moral dimensions of research and teaching

The moral dimension of teaching. With the relationship between teacher and students as the essential unit of interaction, teaching is inextricably embedded in a context of moral responsibility. The emphasis on "rightness of conduct" supports the conception of teaching as an Aristotelian "practical science" (for further elaboration of the moral aspects of teaching, see also Clark, 1991; Noddings, 1988; Sockett, 1989; Tom, 1984). Hawkins (1973) illuminates the moral dimension of teaching by focusing on the issue of control:

> "The [teacher-student] relationship, by its very nature, involves an offer of control by one individual over the functioning of another, who in accepting this offer, is tacitly assured that control will not be exploitative but will be used to enhance the competence and extend the independence of the one controlled, and in due course will be seen to do so." (p.)

According to Hawkins, control is a mutually accepted part of a teacher-student relationship established ostensibly for the benefit of the student. The teacher, therefore, has a

moral obligation to act toward that end.[5] Mergendoller (1984) elaborates further on the specifics of how control is manifested in the classroom.

> "I conceive of the classroom as having a moral order which permeates nearly every aspect of student life and activity. The status differential between teachers and students is one aspect of this moral order, but there are many more; establishment of behavioral norms and academic expectations, reward and punishment strategies, distribution of teacher help and attention, grouping decisions." (Mergendoller, in Tom, 1984, p.95)

The moral dimension of research. In a practical discipline such as teaching, the intended outcome is justifiable action: conduct that is "right" or of value. By contrast, in a theoretical discipline such as educational research, the coveted goal is warranted conclusion. Conclusions or knowledge claims are warranted by what Schwab (19) describes as the syntactic structure of the discipline: the system of rules and procedures by which new knowledge is adjudicated within a disciplinary community. The syntactic structure is allegedly a rational, technical process (footnote) focussing on the representativeness and validity of evidence, the relationship between evidence and conclusions, and the conceptual and empirical correspondence between the research and the broader field in which it is embedded.

This is not to suggest that issues of conduct or value are of no relevance to the field of research. An unmistakable moral theme characterizes scientific and public debate about atomic energy, medical treatments, or animal research. In addition, issues of moral conduct are unavoidable in social science research. Medical and psychological research, have long recognized the power of authority implicit in research situations.[6] Deliberate precautions are taken to protect the welfare of "subjects" and to assure that the research is conducted in a responsible manner.

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[5] Other, more critical interpretations of the element of control in educational settings are represented by critical-emancipatory theorists (Habermas, 1971; Carr & Kemmis, 1986), liberation pedagogy (Friere, 1970), and some philosophers of science (c.f. Feyerabend, 1975). Their arguments for the oppressive nature of school cite that school is mandatory, that teaching tends to be authoritative, that schools tend to maintain societies class system, and that benefits to students are far from obvious.

[6] Milgram's pyschological studies of human compliance provide a classic and compelling example of the nature of authority and control in research settings. The degree to which his subjects complied with his requests to administer -- what they thought were -- lethal electrical shocks to innocent victims stirred public and professional outrage and concern.

(e.g all medical and psychological research involving humans must receive approval from the institution's Human Subjects Committee, consent forms are required).

The main point is this: while research activities (particularly social science research) do strive to treat the participants fairly and humanely, moral action is not "raison d'etre". In teaching, moral imperatives are more than simply a code of ethics in which the business of teaching can occur. To act morally -- to treat the students with compassion, to provide them with experiences that are of value -- is at the core of what teaching is. "To educate is to lead responsibly -- to influence students' knowledge, skills, and dispositions in a way that will serve them and their society well and to do so in a morally defensible way (Clark, in Goodlad, 1990, p. 252).

A conflict of conduct: When research seems like the "wrong" thing to do

What were the moral dimensions of my particular classroom situation? As I attempted to draw more thoughts from Tori, she was clearly becoming uncomfortable with the situation. She seemed confused with my requests for her to explain again. She may have thought that she had just provided an explanation...why did I want her to explain again? Also, she may have been expecting me, as the teacher, to respond to her initial answer with some sort of evaluative response and then to move on to another student.[7] She may have been surprised to find herself answering more questions -- questions that were ambiguous, questions that she had not volunteered to answer. Her sideward glances to the rest of the class, her furrowed brow, her plaintive sighs all suggested that I was treating her in a way that was, somehow, not quite right.

Not only did this course of action seem to place Tori in an uncomfortable position, by granting extended attention to a single student, I sensed that I was also being unfair to the rest of the class. Several other students had raised their hands in eager anticipation of their turn to answer the question. After they had been made to wait for a considerable longer time than they were accustomed, they began to demonstrate their dissatisfaction various ways. Some students continued to have their hands raised but with a loud sigh; others explicitly complained about how

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[7] Socio-linguists have identified several enduring, conventional patterns of conversation between teacher and students (what Lemke (1990) calls activity structure and Cazden (1986) calls participation structure). In addition to providing a predictable, orderly means of interaction, these patterns maintain and reflect other implicit elements of classroom culture such as the nature of authority and the nature of learning.

it was unfair that I was not calling on them; and more than a few students gave up and disengaged from the lesson by turning away from the front of the class, talking to their friends, or putting their heads on the desk.[8]

On the one hand, from a research perspective, my persistent questioning seemed like a methodologically sound approach. To gain a rich understanding of an individual's knowledge typically requires a series of extended, probing questions. In the context of the this classroom, however, my actions seemed unfair, inconsiderate, or irresponsible. My efforts to be thorough and systematic -- to exercise "control" in a research sense -- in learning about Tori's explanation simultaneously led to a loss of "control" in teaching sense. My actions as a researcher compromised my role as a teacher.

A dilemma?

Lampert's (1985) article "How do teachers manage to teach?" put forth a powerful critique against a technical characterization of teaching-as-problem-solving. Instead, Lampert argued that good teaching is inherently fraught with dilemmas that defy satisfactory solutions. In these cases, dilemmas are not "solved"; the teacher can only strive to manage or negotiate the situation by acting with compassion and integrity. School administration, the general public, and the academic community can benefit from a greater appreciation of the intellectually and ethically complex nature of teaching.

It is tempting to characterize my particular classroom situation as a vivid example of a dilemma in teaching. I shall argue, however, that labeling this situation as a dilemma may inadvertently misrepresent the nature of the problem and may also limit the range of possible alternatives for action.

First, what is a dilemma? According to Webster's New Collegiate Dictionary, a dilemma is defined as:

a: a choice or a situation involving choice between equally unsatisfactory alternatives,

b: a problem seemingly incapable of a satisfactory solution.

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[8] Although control in the classroom is typically associated with the role of the teacher, students also influence classroom activity. Lemke (1990) describes actions such as "sidetalk" and not paying attention as tactics by which students will protest or disengage from conventional patterns of classroom interaction.

One the of defining features of dilemmas, then, is that they seem intractable. Our common figurative language vividly conveys this inherent tension, e.g. one is caught between "the horns of a dilemma", or is "between a rock and hard place", or "is damned if he does and damned if he doesn't".

Because teaching is inescapably concerned with issues of conduct, dilemmas in teaching will also be infused with a strong moral dimension. The apparent dilemma that I felt in the classroom was rendered particularly acute because it involved treatment of students that seemed irresponsible. I felt the tension between asking probing questions of Tori and attending to the responses of the other students. I felt torn between in my role as a researcher and my responsibilities as a teacher. However, despite my inability to bring a quick resolution to these tensions, I do not believe that it quite accurate to identify this situation as a dilemma.

Construing dilemmas as questions of fairness

Instead, I propose that many seemingly intractable dilemmas in teaching can be productively construed as questions of fairness. Again, from Webster's New Collegiate Dictionary:

fair just (syn): implies a precise following of a standard of what is right and proper <it is easier to be kind than just>

Standards or rules of fairness are dynamic and specific to situations. The standards for what is considered fair conduct varies from school to school, from teacher to teacher, from class to class. Fairness is characterized in the expectations, the actions, the rules, and the rewards of a classroom. Each of these elements of the classroom culture can, to a large extent, be established and maintained by the teacher. More importantly, the teacher has the capacity to change standards of fairness. Therefore, if the undesirable consequences of a dilemma can be construed as encroachments upon what is considered fair, then opportunities for negotiating the situation emerge with fewer compromises to personal or professional integrity. Dilemmas need not be "no win" situations.

The third choice: Redefine the standards of fairness. I am now in a position to discuss the third option in my dilemma with Tori. My extended questioning of Tori had clearly violated several established expectations concerning the manner in which teachers and students should

interact. First, teachers usually expect brief student responses to their questions. (See Dillon). Second, teachers usually acknowledge students who wish to respond to the question. By the existing system of rules and values of my class, my actions were interpreted as unfair by the students. Several students complained explicitly that I was ignoring their requests to participate while others tended to "disengage" as a form of passive resistance to my method of teaching.

How might the class's conception of what was "fair" and "unfair" be redefined so that the goals of both research and teaching might be concurrently, effectively, and responsibly pursued? Clearly, a non-traditional classroom culture would have to be established where the roles, rules, expectations, norms were changed so that extended teacher-student interactions were perceived as a normal, valuable part of the classroom experience (See Figure 2). For example, the purpose of teacher questions would change. Instead of representing a tool for evaluation, monitoring, and controlling students, teacher questions would be associated with a genuine interest and valuing of the students' knowledge. In this context, students may be more likely to want to answer questions and give more elaborated, courageous responses. Furthermore, efforts must be taken to reinforce the belief that this type of extended discussion does not suggest that the student must be wrong or confused. In fact, exactly the opposite is implied. Continued conversation with a particular student indicates that his or her ideas are insightful and important.

Finally, when the teacher does not immediately call upon other students in the class who wish to participate, these occasions must be made to represent opportunities for the students to learn from their peers. Accomplishing this change in the context of learning is not likely to be simple. The conception of teacher as the principle source of knowledge in the classroom and of teaching as didactic is deeply embedded in the students' prior and, most likely, current experiences in school. However, altering the perceived and actual function of student knowledge in instructional settings is a critical prerequisite to the type of research/teaching issues that interests me. Without a classroom context that facilitates and supports extended dialogue between a particular student and myself, my actions as a teacher will continue to be construed as "unfair".

Figure 2

Changing the classroom context to support research and teaching

Specifc activities of teaching and research	Interpretation of activities: Before	Interpretation of activities: After
The teacher asks questions of the students	Questions imply evaluation, monitoring, and efforts to control students	Questions seek clarification and elaboration of students' ideas
A single student engages in an extended discussion with the teacher	Suggests that the student must be not understand or have the wrong idea	Suggests that the student has something uniquely valuable to share
Most of the class waits while the teacher spends a lot of time talking to another student	Is unfair to the rest of the students	Is a valuable opportunity for other students to listen and learn from someone other than the teacher

Conclusion: Why struggle to be a researcher/teacher?

Research's goal of understanding and teaching's goal of educating can create practical problems when planning exactly how one goes about doing both at the same time. In addition, because the researcher is directly involved in teaching the students, rather than observing another person teach or interviewing the students outside of class, moral obligations and responsibilities associated with being the teacher become of critical concern. Fortunately, the apparent dilemmas that emerge from the juxtaposition of research and teaching can often be construed as issues of fairness. Highlighting the socially constructed nature of what is considered fair and unfair offers the potential for reshaping the expectations, norms, and values of a classroom into a context where both research and teaching might be productively accomplished.

The challenges of being a researcher/teacher are serious and usually without simple solutions. While the difficulties associated with this type of work are daunting indeed, I came to realize that engaging honestly in the struggle yielded unexpected benefits. These benefits take the form of questions: questions that were stimulated and informed by my struggle to be a researcher/teacher. These questions, while not unfamiliar, are of central importance to both educational research and classroom teaching.

What does it means to learn and understand in the classroom? Those who adopt the role of the researcher/teacher frequently attempt to employ innovative curriculum and teaching methods. In doing so, they will (perhaps unconsciously) be moving against established conceptions of how teachers and students, or students and students ought to behave in a classroom setting. Conceptions of fairness and, more importantly, the underlying implicit and explicit culture of behavior in schools reflect deeply ingrained assumptions about education held by the teacher, the students, the school, and the community. Changing the culture of the classroom to accommodate different patterns of interaction and new perspectives on what it means to learn and understand is likely to require a great deal of thought, energy, and time. The researcher/teacher will be required, therefore, to consider basic curricular questions such as "What are the goals of instruction, how will learning occur, and what are the roles of the teacher and students?" In addition, the differences between these intended curricular goals and assumptions will have to be compared and contrasted with those goals and assumptions implicit in existing practice. For example, in my own experience, I had to puzzle over why many students seemed to prefer to do tedious seatwork activities (e.g. worksheets) instead of engaging in -- what would seem to be -- more interesting, thought provoking discussions.

What is worth teaching? Tom (1984) identifies two moral dimensions of teaching: (a) "a moral relationship between teacher and the student that is grounded in the dominant power position of the teacher" - **a rightness of conduct**; (b) "a curriculum plan selects certain objectives or pieces of content instead of others; this selective process either explicitly or implicitly reflects a conception of desirable ends" - **what is important or valuable**. (Tom, 1984, p. 78).

In addition to questions of right or wrong conduct, questions about the nature of desirable ends for instruction also demand consideration in school settings. These curricular imperatives are captured by normative questions such as "what really matters" or "to what end does one pursue a particular activity?" (Shulman, 2nd HRT).

The researcher/teacher, therefore, also has a moral responsibility to make classroom experiences valuable for the students. Because this type of research consumes a considerable amount of in-school time and because that time is designated for instruction, the issue of whether the students are learning of anything worth becomes critical. Are these new curricular ideas worth teaching and are they better than the existing curriculum? Also, what are the consequences

of failure? If the curriculum or the teaching fails to lead to valuable changes in the students' understanding, the implications extend far beyond a "failure to reject the null hypothesis".

What does it mean to do research? The perspective of the researcher/teacher affords the potential for rich description and useful insight into the experience of teaching. However, there are features inherent in the researcher/teacher role that some individuals may perceive as constraints to research as it is typically conceived. To briefly summarize from my own experience: first, I devoted an unexpectedly large amount of time and energy to establishing and maintaining a classroom culture that supports the type of innovative teaching that researcher/teachers typically intend to do. Consequently, the effort and experiences associated with trying to get students to act and think in a different manner often provided the most vivid and interesting "data", regardless of the original focus of my research. Second, the environment of the classroom and of schools, in general, is extremely complex and unpredictable. My best laid plans were often at the mercy of student absences, district testing, field trips in other classes, and special assemblies. These conditions forced me to rethink and relinquish traditional concepts of "control" -- a fundamental element in the design, procedure, and analysis of research. Similarly, Atkin (1991) describes another infringement on conventional research control: the researcher/teacher changes during the research progresses as a result of events and actions. Finally, as a researcher/teacher, while my role as researcher was optional, my role as teacher was not. At all times, I had a moral and legal responsibility to treat students with compassion and create experiences that were educationally valuable.

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